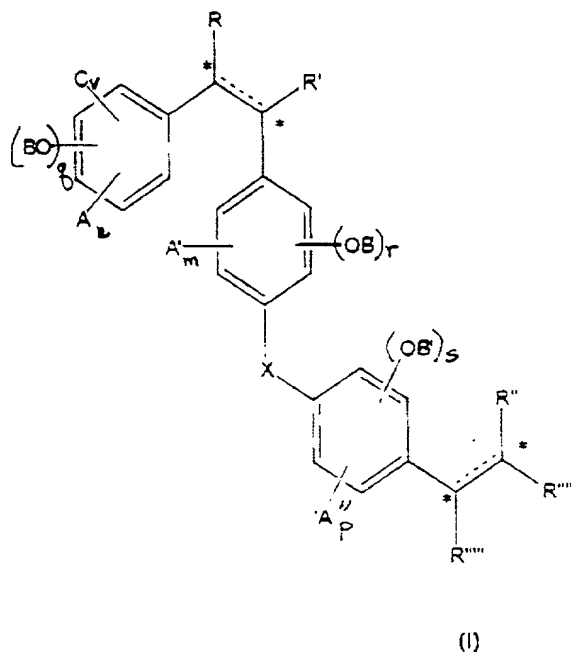


What is claimed is:

1. A compound of the formula I:



wherein stereocenters * are R or S;

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

R and R' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups that may be substituted, or functional groups like COOR₃, where R₃ = H or C₁-C₂₀ linear or branched alkyl or C₅-C₂₀ aryl; CONR₁R₂, where R₁ and R₂ may be independently or together H, linear or branched C₁-C₂₀ alkyl or C₅-C₂₀ aryl, NH₂, OH, C₁-C₂₀ linear or branched alkoxy, halo, cyano, or R+R'=O.

A, A', A'', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, linear or branched C₁-C₂₀ alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkylamino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and n, m, and p are independently integers from 0 to 3;

B, B', and B'' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkyl carboxyl amino, C₁-C₂₀ carbalkoxy; aroyl, araalkanoyl, carboxyl, cyano, halo, hydroxy; and q, r and s are independently integers from 1 to 3:

R''', R'''' and R''''' are independently H, C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, or cyano.
X = NH, O, S, S=O, or SO₂.

2. A compound according to Claim 1 wherein C and A are hydrogen.

12 *Am. only*
3. A compound according to Claim 2 wherein q=2 and B is methyl.

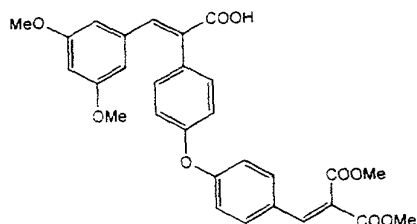
15
4. A compound according to Claim 1 wherein A' is hydrogen and r = O.

5. A compound according to Claim 1 wherein A'' is hydrogen and s = O.

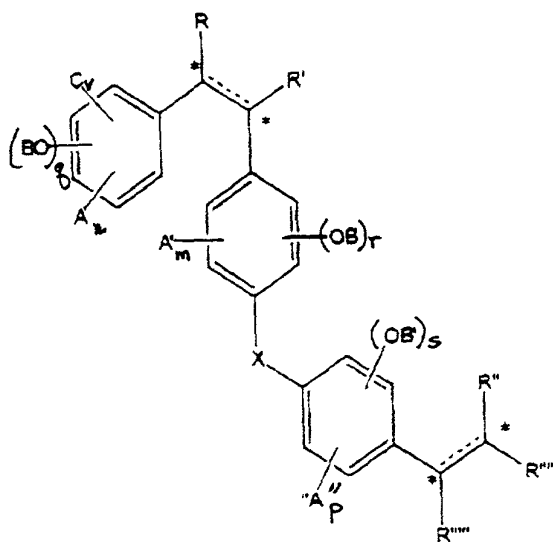
20
6. A compound according to Claim 1 wherein R is hydrogen and R' is -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

25
7. A compound according to Claim 1 wherein X is oxygen; R''' is hydrogen; and R''' and R'''' are independently -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

8. The compound according to Claim 1 of the formula:



9. A pharmaceutical composition containing a blood glucose lowering effective amount of a compound of formula I in a pharmaceutically acceptable carrier.



wherein stereocenters * are R or S;

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

R and R' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups that may be substituted, or functional groups like COOR₃, where R₃ = H or C₁-C₂₀ linear or branched alkyl or C₅-C₂₀ aryl; CONR₁R₂, where R₁ and R₂ may be independently or together H, linear or branched C₁-C₂₀ alkyl or C₅-C₂₀ aryl, NH₂, OH, C₁-C₂₀ linear or branched alkoxy, halo, cyano, or R+R'=O.

A, A', A'', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, linear or branched C₁-C₂₀ alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkylamino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and n, m, and p are independently integers from 0 to 3;

B, B', and B'' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkyl carboxyl amino, C₁-C₂₀ carbalkoxy; aroyl, araalkanoyl, carboxyl, cyano, halo, hydroxy; and q, r and s are independently integers from 1 to 3;

R''', R'''' and R''''' are independently H, C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, or cyano.
X = NH, O, S, S=O, or SO₂.

10. A composition according to Claim 9 wherein C and A are hydrogen.

11. A composition according to Claim 10 wherein q=2 and B is methyl.

12. A composition according to Claim 9 wherein A' is hydrogen and r = O.

13. A composition according to Claim 9 wherein A'' is hydrogen and s = O.

14. A composition according to Claim 9 wherein R is hydrogen and R' is -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

5.

10



30



wherein stereocenters * are R or S;

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

R and R' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups that may be substituted, or functional groups like COOR₃, where R₃ = H or C₁-C₂₀ linear or branched alkyl or C₅-C₂₀ aryl; CONR₁R₂, where R₁ and R₂ may be independently or together H, linear or branched C₁-C₂₀ alkyl or C₅-C₂₀ aryl, NH₂, OH, C₁-C₂₀ linear or branched alkoxy, halo, cyano, or R+R'=O.

A, A', A'', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, linear or branched C₁-C₂₀ alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkylamino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and n, m, and p are independently integers from 0 to 3;

B, B', and B'' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkyl carboxyl amino, C₁-C₂₀ carbalkoxy; aroyl, araalkanoyl, carboxyl, cyano, halo, hydroxy; and q, r and s are independently integers from 1 to 3;

R''', R'''' and R''''' are independently H, C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, or cyano.

X = NH, O, S, S=O, or SO₂.

18. A method according to Claim 17 wherein C and A are hydrogen.

19. A method according to Claim 18 wherein q=2 and B is methyl.

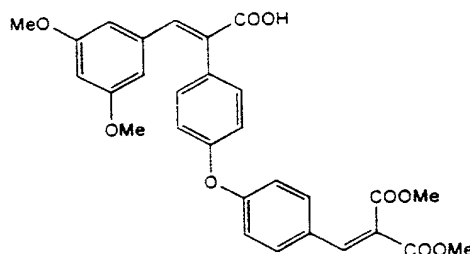
20. A method according to Claim 17 wherein A' is hydrogen and r = O.

21. A method according to Claim 17 wherein A'' is hydrogen and s = O.

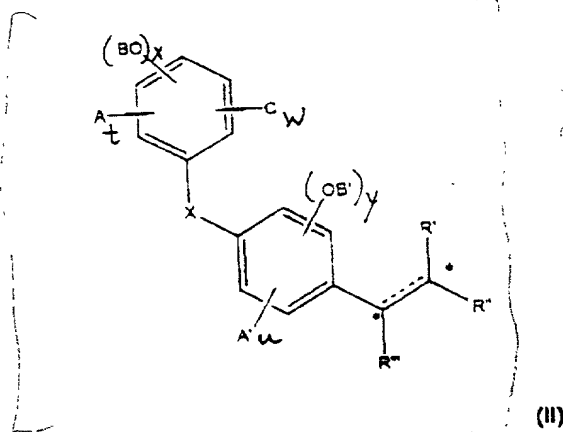
22. A method according to Claim 17 wherein R is hydrogen and R' is -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

23. A method according to Claim 17 in formula I wherein X is oxygen; R''' is hydrogen; and R''' and R''' are independently -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

24. The method according to Claim 17 wherein said compound comprises:



25. A compound of the formula II:



*use the new formula II
shown on p. 2 of the
amendment dated
July 19, 2001*

wherein stereocenters * are R or S;

dotted lines indicates that a double bond may be present or absent, and the double bond geometry may be E or Z;

A, A', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀

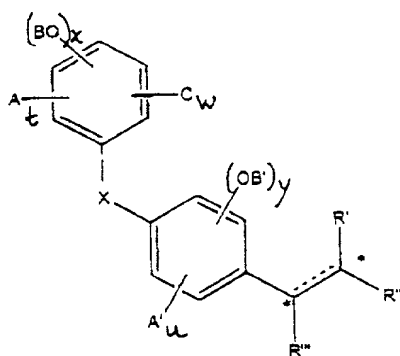
alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and t, u, and w are independently integers from 0 to 3;

B and B' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ alkanoyl, C₁-C₂₀ alkenoyl, C₁-C₂₀ alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₆-C₂₀ aroyl, C₆-C₂₀ aralkanoyl, carboxyl, cyan, halo, hydroxy; and x and y are independently integers from 0 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo or cyano.

X = NH, O, S, S=O, or SO₂

26. A pharmaceutically composition containing a blood glucose lowering effective amount of a compound of the formula II in a pharmaceutically acceptable carrier.



(II)

wherein stereocenters * are R or S;

dotted lines indicates that a double bond may be present or absent, and the double bond geometry may be E or Z;

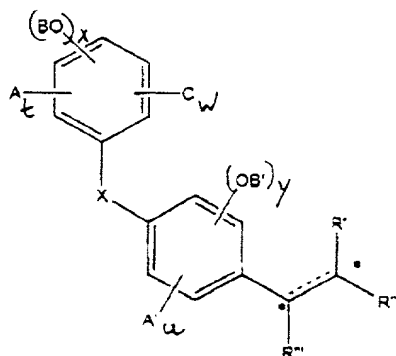
A, A', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and t, u, and w are independently integers from 0 to 3;

B and B' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ alkanoyl, C₁-C₂₀ alkenoyl, C₁-C₂₀ alkenyl, C₁-C₂₀ alkoxy, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₆-C₂₀ aroyl, C₆-C₂₀ aralkenyl, carboxyl, cyan, halo, hydroxy; and x and y are independently integers from 0 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxy, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₆-C₂₀ aroyl, C₆-C₂₀ aralkenyl, carboxyl, cyan, halo, hydroxy; and x and y are independently integers from 0 to 3;

X = NH, O, S, S=O, or SO₂

27. A method for lowering blood glucose in a subject comprising administering to said subject an effective blood glucose lowering amount of a composition of the formula II.



(II)

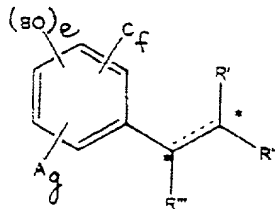
wherein stereocenters * are R or S;

dotted lines indicates that a double bond may be present or absent, and the double bond geometry may be E or Z;

A, A', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and t, u, and w are independently integers from 0 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear and branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxy, carbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxy, OH, C₁-C₂₀ alkoxy, halo, cyano.

29. A pharmaceutically composition containing a blood glucose lowering effective amount of a compound of the formula III in a pharmaceutically acceptable carrier.



(III)

wherein stereocenters (designated by *) could be R- or S-.

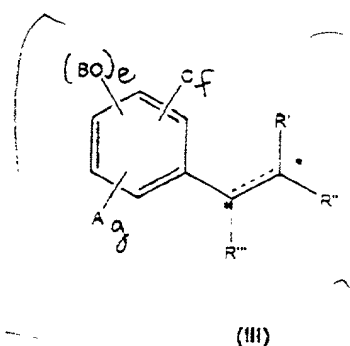
dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

A and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ alkoxy, carbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; thiol, SOR or SOR₂; and f and g are independently integers from 0 to 3;

B is independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxy, carbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₅-C₂₀ aroyl, C₆-C₂₀ aralkyl, carboxyl, cyan, halo, hydroxy; and e is an integer from 1 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear and branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxy, carbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxy, OH, C₁-C₂₀ alkoxy, halo, cyano.

30. A method for lowering blood glucose in a subject comprising administering to said subject an effective blood glucose lowering amount of a composition of the formula III.



new back III

wherein stereocenters (designated by *) could be R- or S-.

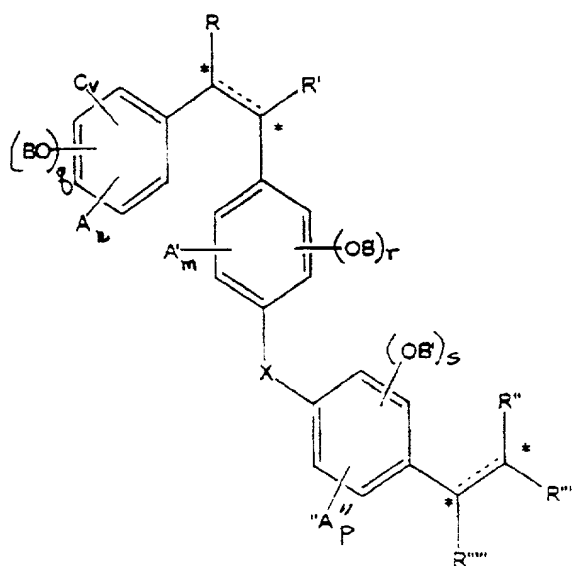
dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

A and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; thiol, SOR or SOR₂; and f and g are independently integers from 0 to 3;

B is independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₅-C₂₀ aroyl, C₆-C₂₀ aralkenyl, carboxyl, cyan, halo, hydroxy; and e is an integer from 1 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear and branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxy, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxy, OH, C₁-C₂₀ alkoxy, halo, cyano.

31. A pharmaceutical composition containing a serum triglyceride lowering effective amount of a compound of formula I in a pharmaceutically acceptable carrier.



(I)

wherein stereocenters * are R or S;

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

R and R' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups that may be substituted, or functional groups like COOR₃, where R₃ = H or C₁-C₂₀ linear or branched alkyl or C₅-C₂₀ aryl; CONR₁R₂, where R₁ and R₂ may be independently or together H, linear or branched C₁-C₂₀ alkyl or C₅-C₂₀ aryl, NH₂, OH, C₁-C₂₀ linear or branched alkoxy, halo, cyano, or R+R'=O.

A, A', A'', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, linear or branched C₁-C₂₀ alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkylamino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and n, m, and p are independently integers from 0 to 3;

B, B', and B'' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkyl carboxyl amino, C₁-C₂₀ carbalkoxy; aroyl, aralkanoyl, carboxyl, cyano, halo, hydroxy; and q, r and s are independently integers from 1 to 3;

R''', R'''' and R''''' are independently H, C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents. COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, or cyano.
X = NH, O, S, S=O, or SO₂.

32. A composition according to Claim 31 wherein C and A are hydrogen.

33. A composition according to Claim 32 wherein q=2 and B is methyl.

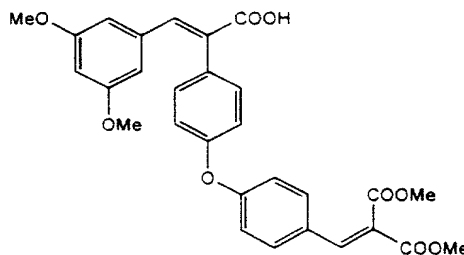
34. A composition according to Claim 31 wherein A' is hydrogen and r = 0.

35. A composition according to Claim 31 wherein A'' is hydrogen and s = 0.

36. A composition according to Claim 31 wherein R is hydrogen and R' is -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

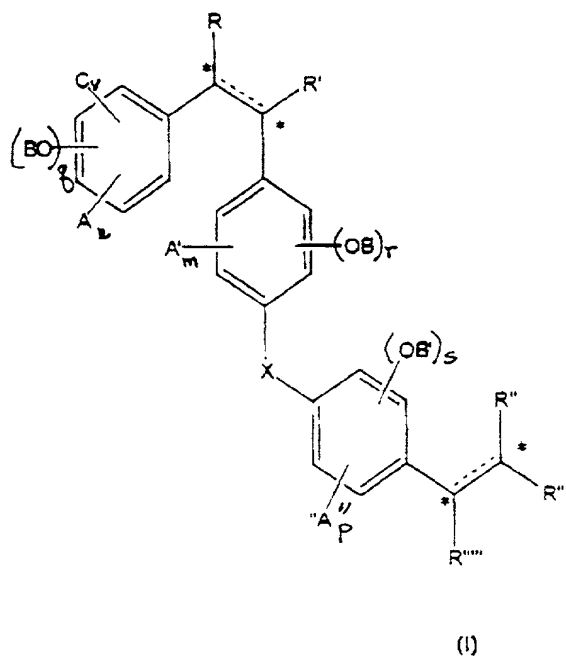
37. A composition according to Claim 31 wherein X is oxygen; R''' is hydrogen; and R''' and R''' are independently -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

38. The composition according to Claim 31 wherein the compound comprises:



39. A method for lowering serum triglyceride in a subject comprising administering to said subject an effective serum triglyceride lowering amount of a

composition containing a compound of the formula I in a pharmaceutically acceptable carrier.



wherein stereocenters * are R or S;

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

R and R' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups that may be substituted, or functional groups like COOR₃, where R₃ = H or C₁-C₂₀ linear or branched alkyl or C₅-C₂₀ aryl; CONR₁R₂, where R₁ and R₂ may be independently or together H, linear or branched C₁-C₂₀ alkyl or C₅-C₂₀ aryl, NH₂, OH, C₁-C₂₀ linear or branched alkoxy, halo, cyano, or R+R'=O.

A, A', A'', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, linear or branched C₁-C₂₀ alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkylamino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and n, m, and p are independently integers from 0 to 3;

B, B', and B'' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkyl carboxyl amino, C₁-C₂₀ carbalkoxy; aroyl, araalkanoyl, carboxyl, cyano, halo, hydroxy; and q, r and s are independently integers from 1 to 3;

R''', R'''' and R''''' are independently H, C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, or cyano.

X = NH, O, S, S=O, or SO₂.

40. A method according to Claim 39 wherein C and A are hydrogen.

41. A method according to Claim 40 wherein q=2 and B is methyl.

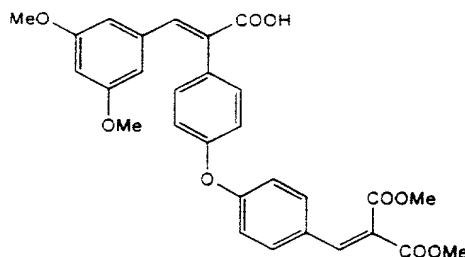
42. A method according to Claim 39 wherein A' is hydrogen and r = O.

43. A method according to Claim 39 wherein A'' is hydrogen and s = O.

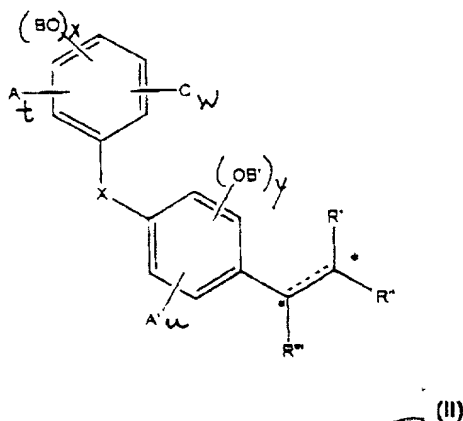
44. A method according to Claim 39 wherein R is hydrogen and R' is -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

45. A method according to Claim 39 in formula I wherein X is oxygen; R'''' is hydrogen; and R''' and R'''' are independently -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

46. The method according to Claim 39 wherein said compound comprises:



47. A pharmaceutically composition containing a serum triglyceride lowering effective amount of a compound of the formula II in a pharmaceutically acceptable carrier.



wherein stereocenters * are R or S;

dotted lines indicates that a double bond may be present or absent, and the double bond geometry may be E or Z;

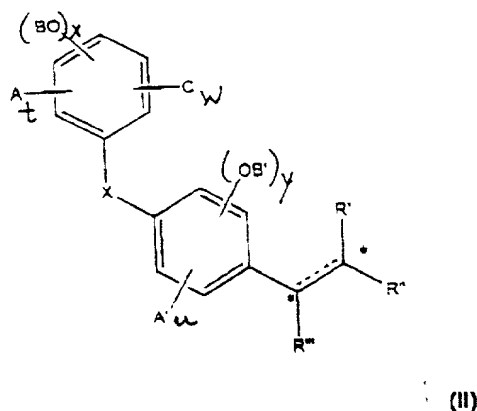
A, A', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and t, u, and w are independently integers from 0 to 3;

B and B' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ alkanoyl, C₁-C₂₀ alkenoyl, C₁-C₂₀ alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₆-C₂₀ aroyl, C₆-C₂₀ araalkanoyl, carboxyl, cyan, halo, hydroxy; and x and y are independently integers from 0 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo or cyano.

X = NH, O, S, S=O, or SO₂

48. A method for lowering serum triglyceride in a subject comprising administering to said subject an effective serum triglyceride lowering amount of a composition of the formula II.



wherein stereocenters * are R or S;

dotted lines indicates that a double bond may be present or absent, and the double bond geometry may be E or Z;

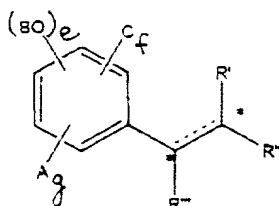
A, A', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and t, u. and w are independently integers from 0 to 3;

B and B' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ alkanoyl, C₁-C₂₀ alkenoyl, C₁-C₂₀ alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₆-C₂₀ aroyl, C₆-C₂₀ araalkanoyl, carboxyl, cyan, halo, hydroxy; and x and y are independently integers from 0 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo or cyano.

X = NH, O, S, S=O, or SO₂

49. A pharmaceutically composition containing a serum triglyceride lowering effective amount of a compound of the formula III in a pharmaceutically acceptable carrier.



(III)

wherein stereocenters (designated by *) could be R- or S-.

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

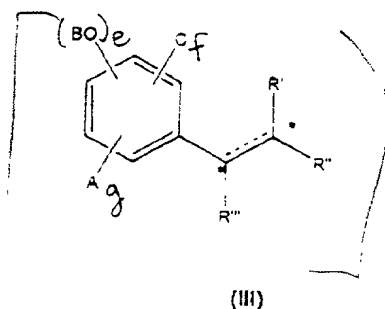
A and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; thiol, SOR or SOR₂; and f and g are independently integers from 0 to 3;

B is independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₅-C₂₀ aroyl, C₆-C₂₀ araalkanoyl, carboxyl, cyan, halo, hydroxy; and e is an integer from 1 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear and branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, cyano.

50. A method for lowering serum triglyceride in a subject comprising administering to said subject an effective serum triglyceride lowering amount of a composition of the formula III.

*Pre An
only*



new formula

wherein stereocenters (designated by *) could be R- or S-.

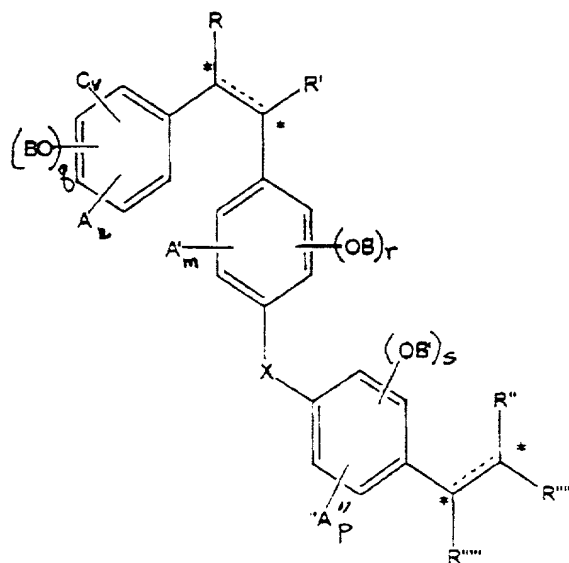
dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

A and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; thiol, SOR or SOR₂; and f and g are independently integers from 0 to 3;

B is independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₅-C₂₀ aroyl, C₆-C₂₀ araalkanoyl, carboxyl, cyan, halo, hydroxy; and e is an integer from 1 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear and branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, cyano.

51. A pharmaceutical composition containing a blood pressure lowering effective amount of a compound of formula I in a pharmaceutically acceptable carrier.



(I)

wherein stereocenters * are R or S;

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

R and R' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups that may be substituted, or functional groups like COOR₃, where R₃ = H or C₁-C₂₀ linear or branched alkyl or C₅-C₂₀ aryl; CONR₁R₂, where R₁ and R₂ may be independently or together H, linear or branched C₁-C₂₀ alkyl or C₅-C₂₀ aryl, NH₂, OH, C₁-C₂₀ linear or branched alkoxy, halo, cyano, or R+R'=O.

A, A', A'', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, linear or branched C₁-C₂₀ alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkylamino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and n, m, and p are independently integers from 0 to 3;

B, B', and B'' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkyl carboxyl amino, C₁-C₂₀ carbalkoxy; aroyl, aralkanoyl, carboxyl, cyano, halo, hydroxy; and q, r and s are independently integers from 1 to 3;

R''', R'''' and R''''' are independently H, C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxy carbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxy carbonyl, OH, C₁-C₂₀ alkoxy, halo, or cyano.
X = NH, O, S, S=O, or SO₂.

52. A composition according to Claim 51 wherein C and A are hydrogen.

53. A composition according to Claim 52 wherein q=2 and B is methyl.

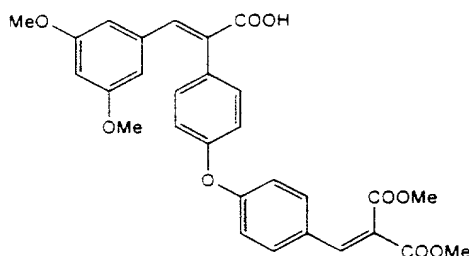
54. A composition according to Claim 51 wherein A' is hydrogen and r = O.

55. A composition according to Claim 51 wherein A'' is hydrogen and s = O.

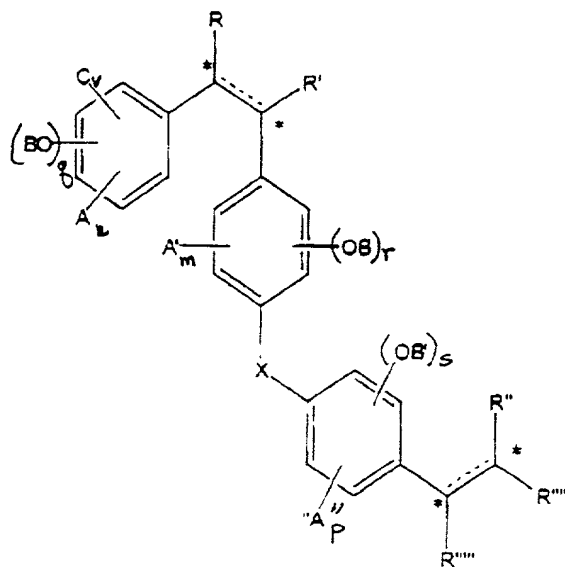
56. A composition according to Claim 51 wherein R is hydrogen and R' is -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

57. A composition according to Claim 51 wherein X is oxygen; R'''' is hydrogen; and R''' and R'''' are independently -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

58. The composition according to Claim 51 wherein the compound comprises:



59. A method for lowering blood pressure in a subject comprising administering to said subject an effective blood pressure lowering amount of a composition containing a compound of the formula I in a pharmaceutically acceptable carrier.



(I)

wherein stereocenters * are R or S;

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

R and R' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups that may be substituted, or functional groups like COOR₃, where R₃ = H or C₁-C₂₀ linear or branched alkyl or C₅-C₂₀ aryl; CONR₁R₂, where R₁ and R₂ may be independently or together H, linear or branched C₁-C₂₀ alkyl or C₅-C₂₀ aryl, NH₂, OH, C₁-C₂₀ linear or branched alkoxy, halo, cyano, or R+R'=O.

A, A', A'', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, linear or branched C₁-C₂₀ alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkylamino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and n, m, and p are independently integers from 0 to 3;

B, B', and B'' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxy, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkoxy; C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkyl carboxyl amino, C₁-C₂₀ carbalkoxy; aroyl, aralkano, carboxyl, cyano, halo, hydroxy; and q, r and s are independently integers from 1 to 3;

R'', R''' and R'''' are independently H, C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxy, C₁-C₂₀ alkoxy, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxy, OH, C₁-C₂₀ alkoxy, halo, or cyano.

X = NH, O, S, S=O, or SO₂.

60. A method according to Claim 59 wherein C and A are hydrogen.

61. A method according to Claim 60 wherein q=2 and B is methyl.

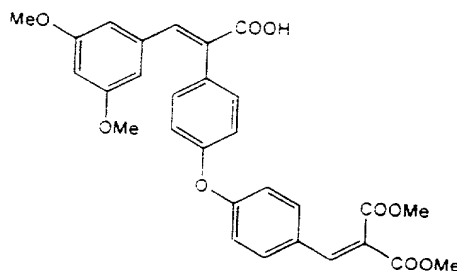
62. A method according to Claim 59 wherein A' is hydrogen and r = O.

63. A method according to Claim 59 wherein A'' is hydrogen and s = O.

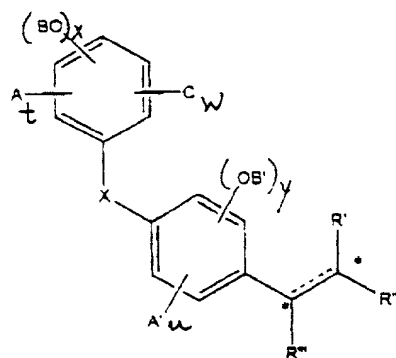
64. A method according to Claim 59 wherein R is hydrogen and R' is -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

65. A method according to Claim 59 in formula I wherein X is oxygen; R''' is hydrogen; and R'''' and R'''' are independently -COOR₃, wherein R₃ is hydrogen, a cation, C₁-C₁₀ alkyl or C₅-C₁₀ aryl.

66. The method according to Claim 59 wherein said compound comprises:



67. A pharmaceutically composition containing a blood pressure lowering effective amount of a compound of the formula II in a pharmaceutically acceptable carrier.



(II)

wherein stereocenters * are R or S;

dotted lines indicates that a double bond may be present or absent, and the double bond geometry may be E or Z;

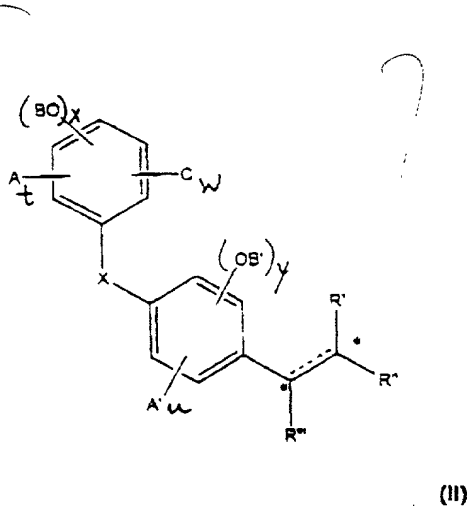
A, A', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and t, u, and w are independently integers from 0 to 3;

B and B' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ alkanoyl, C₁-C₂₀ alkenoyl, C₁-C₂₀ alkenyl, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₆-C₂₀ aroyl, C₆-C₂₀ aralkanoyl, carboxyl, cyan, halo, hydroxy; and x and y are independently integers from 0 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxy, C₁-C₂₀ alkoxy, halo or cyano.

X = NH, O, S, S=O, or SO₂

68. A method for lowering blood pressure in a subject comprising administering to said subject an effective blood pressure lowering amount of a composition of the formula II.



wherein stereocenters * are R or S;

dotted lines indicates that a double bond may be present or absent, and the double bond geometry may be E or Z;

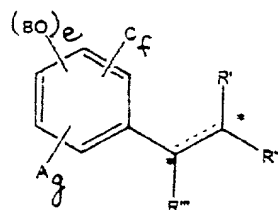
A, A', and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; and t, u, and w are independently integers from 0 to 3;

B and B' are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ alkanoyl, C₁-C₂₀ alkenoyl, C₁-C₂₀ alkenyl, C₁-C₂₀ alkoxy, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₆-C₂₀ aroyl, C₆-C₂₀ aralkanoyl, carboxyl, cyan, halo, hydroxy; and x and y are independently integers from 0 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear or branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxy, C₁-C₂₀ alkoxy, halo or cyano.

X = NH, O, S, S=O, or SO₂

69. A pharmaceutically composition containing a blood pressure lowering effective amount of a compound of the formula III in a pharmaceutically acceptable carrier.



(III)

wherein stereocenters (designated by *) could be R- or S-.

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z;

A and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; thiol, SOR or SOR₂; and f and g are independently integers from 0 to 3;

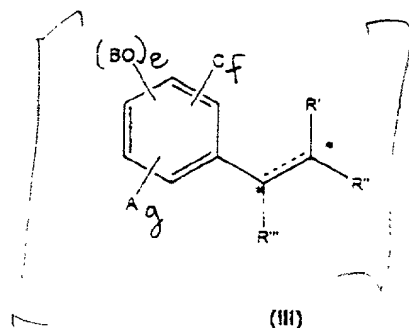
B is independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₅-C₂₀ aroyl, C₆-C₂₀ araalkanoyl, carboxyl, cyan, halo, hydroxy; and e is an integer from 1 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear and branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, cyano.

70. A method for lowering blood pressure in a subject comprising administering to said subject an effective blood pressure lowering amount of a composition of the formula III.

Pre Am only

new II



wherein stereocenters (designated by *) could be R- or S-.

dotted lines indicate that a double bond may be present or absent, and the double bond geometry may be E or Z:

A and C are independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy, C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy; carboxyl, cyano, halo, hydroxy; thiol, SOR or SOR₂; and f and g are independently integers from 0 to 3;

B is independently H, C₁-C₂₀ acylamino, C₁-C₂₀ acyloxy; C₁-C₂₀ linear or branched alkanoyl, C₁-C₂₀ linear or branched alkenoyl, C₁-C₂₀ linear or branched alkenyl, C₁-C₂₀ alkoxycarbonyl, C₁-C₂₀ linear or branched alkoxy, C₁-C₂₀ linear or branched alkyl amino, C₁-C₂₀ alkylcarboxylamino, C₁-C₂₀ carbalkoxy, C₅-C₂₀ aroyl, C₆-C₂₀ araalkanoyl, carboxyl, cyan, halo, hydroxy; and e is an integer from 1 to 3;

R', R'', and R''' are independently H or C₁-C₂₀ linear and branched alkyl or alkenyl groups which may contain substituents, COOH, C₁-C₂₀ alkoxycarbonyl, NH₂, CONH₂, C₁-C₂₀ acylamino, C₁-C₂₀ alkoxycarbonyl, OH, C₁-C₂₀ alkoxy, halo, cyano.